

29  
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DIRECTORATE OF  
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# Intelligence Memorandum

*Consequences of Mining the Seaports and Water  
Approaches to North Vietnam and Bombing the  
Northern Railroads and Roads*

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CENTRAL INTELLIGENCE AGENCY  
Directorate of Intelligence  
23 May 1967

INTELLIGENCE MEMORANDUM

Consequences of Mining the Seaports and  
Water Approaches to North Vietnam and  
Bombing the Northern Railroads and Roads

Summary

A mining program coupled with intensified armed reconnaissance against the railroads and roads in the northern part of North Vietnam would have serious economic consequences, but it would not be likely to weaken the military establishment seriously or to prevent Hanoi from continuing its aggression in the south.

The disruption caused by mining would depend upon the type and extent of the program. A substantial portion of imports could be maintained by sea and coastal water movements despite a conventional mining program designed to prevent the discharge of deep-draft oceangoing ships in harbors. However, almost complete denial of water access to North Vietnam could result from a mining program which also used a newly developed mine effective against shallow-draft shipping.

An optimum program against all means of land and water transportation probably could interdict at most 70 percent of North Vietnam's transport capacity to import, reducing it from about 14,000 tons a day at present to about 3,900 a day. Interdiction to this extent would reduce the present level of goods actually imported by about 25 percent.

North Vietnam could, however, reduce the flow of supplies from outside the country to manageable

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levels by eliminating nonessential imports. The military supplies and essential economic goods needed by Hanoi to continue with the war would not exceed an estimated 3,000 tons a day. This amount of traffic could be handled even if the capacity of North Vietnam's transport system were reduced by 70 percent.

Imports at this level would not be sufficient to continue operations of modern industrial plants or to restore operation of those which have received extensive bomb damage. The economy would be reduced to its essential subsistence character, but those modern sectors such as transportation, construction, communications and other elements essential to support the military establishment in North Vietnam and in the South could be sustained.

-2-

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25X1A

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## Introduction

1. Two alternative target programs are examined in this memorandum. The first is a conventional mining designed to prevent the use of deep-draft ocean-going ships, but which lacks a capability to prevent the use of shallow-draft vessels such as barges, lighters, junks and small craft. The second alternative is a program which includes the first and, in addition, uses a newly developed mine with a capability against shallow-draft shipping.\* Both of these programs include intensified armed reconnaissance operations against the northern railroads and roads leading from Communist China to North Vietnam.

### I. Traffic and Capacity of Major Import Routes

2. North Vietnam's foreign trade traffic moves almost exclusively by sea and rail transport. The bulk of North Vietnam's imports have usually moved by sea. Since the bombing of the petroleum storage facilities at Haiphong, however, petroleum imports--amounting to about 700 tons a day--are no longer handled at the Haiphong port facilities. Haiphong still handles about three-fourths of North Vietnam's dry cargo imports. During the first four months of 1967 an estimated 3,300 tons per day moved through the port and transports by rail probably averaged 1,300 tons per day for a total of 4,600 tons daily during this period.

3. The current transport capacity of the North Vietnamese for the importation of goods totals almost 14,000 tons per day on the average throughout the year. The capacity of the major ports--Haiphong,

25X4

-3-

SECRET

25X1A

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Hon Gai, and Cam Pha--to receive imports totals 5,500 tons, and the railroad, road and river connections from China can deliver an average of at least 8,400 tons per day.\* Table I presents these estimates in detail.

TABLE I

North Vietnam: Transport Capacity of Major  
Import Routes as of April 1967 a/

	Tons Per Day		
	<u>Dry Season</u>	<u>Rainy Season</u>	<u>Annual Average</u> b/
Total	14,400 =====	12,900 =====	13,900 =====
Major ports c/	5,500	5,500	5,500
Haiphong	4,500	4,500	4,500
Hon Gai and Cam Pha	1,000	1,000	1,000
Routes from Kwangsi and Kwangtung	5,700	3,650	5,000
Dong Dang - Hanoi Railroad	3,000	3,000	3,000
Roads	2,700	650	2,000
Routes from Yunnan	3,200	3,700	3,400
Lao Cai - Hanoi Railroad	700	700	700
Roads	1,600	300	1,200
Red River	900	2,700	1,500

a. These estimates do not include amounts that could be offloaded from ocean-going ships into shallow-draft craft and moved to inland ports or coastal ports other than Haiphong or moved over the beaches. Also no estimate is included of the amount that could be moved from South China ports to minor ports and beaches in North Vietnam by shallow-draft craft.

b. The dry season during which road conditions are at their best extends from about October through May. Heavy rains, beginning about May in the northern part of North Vietnam, reduce road capacity until late September. The annual average has been computed using a four-month (June-September) rainy season and an eight-month dry season.

c. Theoretical dry-cargo handling capacity at the docks and assuming that no exports would be handled.

\* There is a strong possibility that the principal railroad connection with China has now been converted to dual-gauge. If this is the case, rail capacity will have been increased by at least 1,500 tons.

-4-

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4. A mining program directed solely against oceangoing shipping could not be expected to halt the receipt by North Vietnam of imports by sea. These ships could be off-loaded, beyond the areas of the mine fields, into small shallow-draft craft which would then proceed to normal areas of discharge. There would be disruptive effects on the transport system, almost all export trade would cease and foreign exchange earnings would become negligible. But at least half of the normal seaborne imports would continue to be received by sea. There is sufficient excess capacity on the Dong Dang-Hanoi railroad leading from China to absorb the traffic that could not be transshipped from oceangoing ships into small craft.

5. In the event that a program against ocean-going ships were coupled with a program using mines capable of blocking channels and rivers used by small craft, the mining would be much more effective. Although it is not possible to judge the effectiveness in field conditions of the new mines designed to stop shallow-draft craft, it is assumed for purposes of analysis that the program is effective enough to stop all seaborne imports. Thus Hanoi would be compelled to give up 3,300 tons of seaborne dry cargo imports daily or find alternative means of transport to handle them. If imports of 3,300 tons a day were added to the volume now moving by rail--1,300 tons--the total would be about 4,600 tons a day. In addition North Vietnam would have to maintain petroleum imports by rail shipment. The total traffic in these circumstances would be about 5,300 tons and would

-5-

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25X1A

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exceed the current capacity of the railroads connecting with China by almost 1,600 tons. If the North Vietnamese wished to maintain this tonnage of imports they would have to resort to the use of motor truck transport from China, or increase the capacity of the railroad lines. Either or both alternatives would be costly and time consuming.

6. Maintaining this flow of traffic would be even more difficult, depending on the extent to which the interdiction campaign against the Hanoi - Dong line reduced its capacity below its present level of 3,000 tons a day.

7. Interdiction of the railroad bridge at Viet Tri on the Lao Cai - Hanoi railroad has effectively reduced the capacity of this line to 25 percent of its pre-attack capacity. There is no railroad bridge on the Dong Dang - Hanoi railroad, with the possible exception of the Doumer Bridge in Hanoi, which could be interdicted to the same degree as the Viet Tri Bridge. The Doumer Bridge is located in downtown Hanoi in a heavily populated area. If it were attacked and ferrying operations were harassed, the capacity of the Hanoi - Dong Dang line then could possibly be reduced by about 75 percent. In this case, which probably represents the maximum attainable interdiction of the railroads, the combined capacity of the two lines to China would be only 1,500 tons a day or about 3,800 short of the capacity to move normal imports.

8. The North Vietnamese would then be compelled to rely on the major road connections to Communist China. There are a total of 5 major roads crossing into China with a combined capacity of 3,200 tons a day. This capacity would ostensibly be unable to assume the full requirement of 3,800 tons that the railroads cannot carry. Moreover, if the roads were used to capacity the movement of goods would be costly and would require the employment of about 5,000 trucks. These trucks, however, could undoubtedly be made available by North Vietnam's allies within a short period of time.

9. It is difficult to predict the extent to which bombing of roads and the trucks moving on them can reduce the capacity of motor transport. A

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case study of our bombing in North Vietnam indicated that the maximum reduction achieved in bombing roads was about 25 percent. If this interdiction could be attained, the theoretical maximum capacity of both road and rail connections to China would be 3,900 tons. Thus the maximum shortfall in terms of maintaining imports at their current levels would be 1,400 tons or 25 percent of current import levels.

## II. Essential Import Requirements

10. North Vietnam could attempt to solve its transport problems discussed above by eliminating all but essential military and economic imports. It is estimated that North Vietnam requires about one million tons of imports annually or 3,000 tons a day to maintain its war effort and carry on essential economic activities. This level of imports is about 45 percent less than the import rate for the first four months of 1967.

The major categories of required imports would probably consist of the following (in metric tons annually):

Military goods	200,000
Cement	90,000
Petroleum	150,000
Food or fertilizer	330,000
Miscellaneous economic goods	<u>330,000</u>
Total	1,100,000

The individual estimates are the results of numerous assumptions and are subject to considerable change, but the basic assumptions used to derive these estimates are the following: (a) military goods will continue to be imported at least at the rate estimated during the first part of 1967; (b) assuming our attacks against the cement plant and electric power supply continue, cement will no longer be produced domestically, and will have to be imported to meet military requirements for construction and repair; (c) petroleum import requirements can be reduced by one-third by cutting out nonessential civilian and military consumption; (d) food will continue to be imported at the rate of identified food imports during January-April 1967; (e) imports of miscellaneous economic goods (including transport and communications

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equipment, construction supplies, rubber products, etc.) can be reduced to about one-half of the import rate of recent months. It is believed that greater reductions in imports of any of these commodities, except possibly food, would reduce the present military capability.

11. Domestic production, particularly in agriculture, and stockpiles of other goods could reduce the North Vietnamese short-term dependence on imports to an even lower level for a few months while alternative import procedures were being worked out. Petroleum stockpiles, for example, are estimated to have amounted to about 60,000 tons at the end of April 1967. Petroleum is probably being consumed at the rate of about 18,000 tons per month. By cutting out all nonessential civilian and military consumption, this rate could probably be reduced to about 12,000 tons per month. Thus the stockpiles would be sufficient for about 5 months without further imports. Cement stocks now available in the country could probably satisfy domestic requirements for a month or two. Additional imports of food may not be required for a number of months because the new crop will be harvested this month (May).

### III. Transport Capacity for Essential Imports

12. Based on the discussion above it is concluded that the North Vietnamese capability to import can be reduced from 14,000 tons to 3,900 tons per day. Essential requirement for imports, however, constitute only 3,000 tons of the 5,300 tons currently being imported daily. Essential requirement could be reduced to an even lower level in the short-run depending on the extent of stockpiles in existence. Thus the remaining transport capacity would exceed the level of essential imports in both the short and long run.

13. The program, however, would present the North Vietnamese with great difficulties and force them to make hard decisions regarding the allocation of scarce transport capacity, conservation of supplies, and establishment of priorities. They have proven that they are capable of overcoming managerial problems of this nature. There is no reason to doubt that the North Vietnamese could cope with this situation. They would be able to maintain essential economic activity and continue the war at the current level.

-8-

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23 May 1967

MEMORANDUM FOR: The Honorable Cyrus R. Vance  
Deputy Secretary of Defense  
Department of Defense

SUBJECT : The Air War Against North  
Vietnam

The attached memoranda were requested for background on questions pertaining to North Vietnam's external supply lines. At the direction of Mr. Helms, copies are being sent to a limited number of senior officials.

/s/ R. J. Smith

R. J. SMITH  
Deputy Director for Intelligence

Attachments (3)

No. 0647/67  
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Identical Memos sent to: General Earle G. Wheeler  
w/atts Chairman, Joint Chiefs of Staff  
Department of Defense  
(cc and atts to Lt. Gen. Carroll)

The Honorable William P. Bundy  
Assistant Secretary

Bureau of East Asian and Pacific Affairs  
Department of State  
(cc and atts to Thomas Hughes)

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